

### REMARKS

Claims 1-3 and 6-29 are pending in this application, with claims 1-3 and 6-8 being independent. Claims 1-3 and 6-8 have been amended. Claims 4 and 5 have been cancelled. Claims 18-29 have been added. Applicant submits that no new matter is introduced by the present amendments.

### *Specification*

The title of the present application is objected to for not being descriptive. Applicant requests the title of the present application to be changed to "LASER OSCILLATOR INCLUDING PHOSPHORESCENT MATERIAL."

### *Claim Objections*

Claim 2 was objected to due to a grammatical error. Applicant has amended claim 2 to obviate this objection.

### *Claim Rejections – 35 U.S.C. § 112*

Claims 1, 2, 3, 6, 7 and 8 were rejected under 35 U.S.C. § 112, second paragraph. Applicant has amended claims 1, 2, 3, 6, 7 and 8 to obviate this rejection.

### *Claim Rejections – 35 U.S.C. § 102*

Claims 1-5 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent Number 5,659,567 ("Roberts"). With respect to canceled claims 4 and 5, this rejection is rendered moot. With respect to claims 1-3, Applicant traverses this rejection.

Claim 1 recites a laser oscillator that includes a laser medium in which a phosphorescent material is dispersed at a concentration of not less than 10 wt% into a host material. The laser also includes an optical resonator for amplifying luminescence from an excimer state of the phosphorescent material and for obtaining a laser beam, and a pumping source for supplying pumping energy to the laser medium.

Applicant requests reconsideration and withdrawal of the rejection of claim 1 because Roberts at least fails to describe or suggest “a laser medium in which a phosphorescent material is dispersed at a concentration of not less than 10 wt% into a host material” (emphasis added).

Roberts relates to a method of operating a solid-state laser having microwave-driven UV light source for exciting the solid-state laser. Abstract. Apparently, the laser of Roberts' invention provides “an efficient, compact, and tunable solid-state laser.” Abstract. However, nowhere does Roberts describe or suggest “a laser medium in which a phosphorescent material is dispersed at a concentration of not less than 10 wt% into a host material” (emphasis added), as recited in claim 1. The Office Action asserts that Roberts teaches this feature in column 17, lines 51-54. Applicant disagrees.

In column 17, lines 51-54, Roberts teaches a Xenon excimer gas ( $\text{Xe}_2^*$ ) which is used in a gas chamber to provide a microwave-driven excimer source. The  $\text{Xe}_2^*$  taught by Roberts is not a phosphorescent material. In contrast and as Roberts describes in more detail in, for example, column 15, lines 26-34; column 15, lines 55-60; and column 20, lines 39-51, the  $\text{Xe}_2^*$  is a fluorescer. As such, Roberts, in this section or any other section, does not describe or suggest a laser medium in which phosphorescent material is dispersed, and it certainly does not describe or suggest “a laser medium in which a phosphorescent material is dispersed at a concentration of not less than 10 wt% into a host material” (emphasis added), as recited in claim 1. It is important to note that the inventors discovered that dispersion of phosphorescent material in a laser medium is effective for generating excimer. In particular, the application notes “the present inventors found that the dispersion of the phosphorescent material at the above-mentioned concentration is effective for generating excimer.” Application at page 5, lines 7-9.

For the forgoing reasons, Applicant requests reconsideration and withdrawal of the rejection of claim 1, along with its dependent claims.

Independent claims 2 and 3 also recite “the laser medium includes a host material and a phosphorescent material dispersed into the host material at a concentration of not less than 10 wt%” (emphasis added). As such, Applicant requests reconsideration and withdrawal of the

rejection of claims 2 and 3, along with their dependent claims, for at least the same reasons presented above with respect to claim 1.

Claims 1-3 and 6-11 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Number 6,687,266 ("Ma"). Applicant traverses this rejection.

Ma relates to an organic light emitting device (OLED). Title. The OLED includes an anode, a cathode, and an emissive layer disposed between the anode and the cathode. Abstract. The emissive layer is used in display of devices such as cellular phone. As such, Ma relates to a technology that is completely different from the claimed subject matter. Nowhere does Ma describes or suggest a laser as recited in the preamble of independent claims 1-3 and 6-8. As such, Applicant asserts that Ma cannot describe or suggest any of the features of the laser recited in independent claims 1-3 and 6-8.

In particular, Ma fails to describe or suggest "a laser medium in which a phosphorescent material is dispersed at a concentration of not less than 10 wt% into a host material" (emphasis added), as recited in claim 1. The Office Action points to column 5, lines 35-40 of Ma, describing the emissive layer as containing a phosphorescent emissive layer, and the Office Action concludes that making the emissive layer out of a single material would make the luminescent material more than 10%, as recited in claim 1. Office Action at page 4, lines 18-20. Applicant disagrees.

Claim 1 explicitly recites "a laser medium in which a phosphorescent material is dispersed at a concentration of not less than 10 wt% into a host material" (emphasis added), and Ma fails to describe or suggest a laser or a laser medium. As such, Ma cannot possibly describe or suggest "a laser medium in which a phosphorescent material is dispersed at a concentration of not less than 10 wt% into a host material" (emphasis added), as recited in claim 1.

In addition and to distinguish Ma further, Applicant has amended claim 1 to include "a pumping source for supplying pumping energy to the laser medium" (emphasis added). Applicant asserts Ma also fails to describe or suggest this feature. For at least these reasons, Applicant requests reconsideration and withdrawal of the rejection of claim 1, along with its dependent claims.

Independent claims 2 and 3 also are directed toward a laser, and they each recite “the laser medium includes a host material and a phosphorescent material dispersed into the host material at a concentration of not less than 10 wt%,” and “a pumping source for supplying pumping energy to the laser medium” (emphasis added). As such, Applicant requests reconsideration and withdrawal of the rejection of claims 2 and 3, along with their dependent claims, for at least the reasons presented above with respect to claim 1.

Independent claims 6-8 also are directed toward a laser, and they each recite “the light emitting element includes a luminescent layer, an anode and a cathode, the luminescent layer is interposed between the anode and the cathode, the luminescent layer includes a host material and a phosphorescent material dispersed into the host material at a concentration of not less than 10 wt% as a laser medium, and a pumping source for supplying pumping energy to the light emitting element” (emphasis added). As such, Applicant requests reconsideration and withdrawal of the rejection of claims 6-8, along with their dependent claims, for at least the reasons presented above with respect to claim 1.

Claims 12-17 are rejected under 35 U.S.C. § 102(e) as anticipated by Ma. Alternatively, claims 12-17 are rejected under 35 U.S.C. § 103(a) as being obvious over Ma. Claims 12-17 directly depend from independent claims 1-8, and, as such, they are believed to be allowable for at least the reasons presented above with respect to claims 1-8.

### ***New Claims***

Claim 18-29 directly depend from independent claims 1-3 and 6-8 and are believed to be allowable for at least the reasons presented above with respect to independent claims 1-3 and 6-8.

### ***Conclusion***

It is believed that all of the pending issues have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims)


that have not been expressed. Finally, nothing in this reply should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this reply, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

The fee in the amount of \$350.00 for excess claim fees, the \$120 extension of time fee, and the \$180 IDS fee are being paid concurrently herewith on the Electronic Filing System (EFS) by way of Deposit Account authorization. Please apply any other charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

Date: \_\_\_\_\_

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